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| 10/526,027 | 08/01/2005 | Neal Deryck Graham | WRAY0018 | 4790 |

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| EXAMINER | |
|---|---|
| BROWN II, DAVID N | |
| ART UNIT | PAPER NUMBER |
| 1791 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentcolorado@hhlaw.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/526,027 | GRAHAM, NEAL DERYCK | |
| | Examiner | Art Unit | |
| | DAVID N. BROWN II | 1791 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06/16/2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4,7-16,18-27,30 and 37-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-16,18-27,30 and 37-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Response to Amendment***

Claim 1 has been amended to include "means for sensing and/or monitoring a plurality of selected conditions... and means for varying [the process] as necessary in response to one or more of said plurality of selected conditions." A power on light meets this limitation. Such a mechanism senses when the power is turned on or when the article is operating. This represents monitoring a plurality of selected conditions. One pushing the power button has varied the process as necessary in response to the condition of the power being on or off. Claim 1 does require the conditions be associated with the installation of the flexible tube structure and that this process be varied as necessary. These limitations are specific to this process.

The examiner also notes that there are several means plus function limitations included in the claims. These will be interpreted in light of the specification according to 35 USC 112, sixth paragraph.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 7-11, 14, 16, 20-25, 40, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,764,237 (Shishkin).

Figure 1 of the Shishkin patent discloses an apparatus for lining the inside surface of a pipe wherein a piston (3) is moved along the inside of a pipeline (1). The piston spreads

a layer of mortar (2), forming it to the pipe surface (4). This enables a hose to be everted along the formed layer (4). Also shown in figure 1 of the Shishkin patent is the hose (5) in contact with the piston (3) during the eversion of the hose. This piston (3) is taken to be the body claimed by applicant. This hose (5) is taken to be the flexible tube structure claimed by applicant.

Shishkin teaches "The flowing medium feed system 15 (FIG. 1) communicates with the chambers 13 and 29 by means of tubes 35 with solenoid valves 36 of any prior art design mounted therein. A limit switch 37 contacting with the hose 5 serves to control the valves. (column 5 lines 47-52)" Shiskin also teaches "Once the whole hose 5 (FIG. 1) has been reeled off the drum 14, the switch 37 switches the solenoid valves 36 and the air begins to enter the cavity of the pipeline 1 disposed behind the piston 31 and shifts the latter along the pipeline 1, the rollers 32 being press-fitted via the hose 5 in the layer 4 of the strip 8. (column 6 lines 17-20)" Therefore there are sensing means to sense a condition associated with the installation process. This condition is the presence of hose on the drum. A condition identified in the specification [0059] is the delivery rate. When the hose on the drum is exhausted, the delivery ceases and air is pumped into the conduit. The operation of the switch changes the delivery rate of the material by sensing the presence of hose on the drum. Shishkin teaches "In the event of a failure in feeding the cement-sand mortar 2 along the tube 9, or upon the completion of application of the protective coating, the pressure of the cement-sand mortar in the tube 9 is declined and owing to the pressure of compressed air in the chamber 39 the plug 10 (FIG. 4) begins to move along the tube 9 and remove

the mortar therefrom, thereby preventing the possible solidification of the cement-sand mortar in the tube 9. (column 6 lines 33-40)" This also addresses claim 41. The event of failure in feeding the mixture in the tube is another condition. It is a condition according to the specification [0059] "surface condition of the conduit" therefore also addressing claim 40. Therefore provided 2 (a plurality) sensed or monitored conditions and a means for varying them in response to the conditions. Since the conditions are sensed or monitored, the sensor or monitor itself is inherent.

Claim 2:

The mortar is pressed onto the surface of the pipeline by the action of the piston (col. 3 lines 51-53). This action creates a formed layer (4) which is held in place by the hose (5). The mortar is taken to be the agent claimed by applicant. Shown in the figure is the method of delivery of the agent to the everting portion of the hose: the formed surface (4) that passes over the piston (3) is delivered to the hose (5).

Claim 3:

The piston may have a cavity (20) or ducts (22) where the agent may be introduced. (Column 4 lines 62-66)

Claim 4:

Since the piston has a flat surface it is taken to be a plate. The piston may have a cavity (20) or ducts (22) where the agent may be introduced. The piston is rigidly supported by the pipeline in which it operates.

Claim 7:

MPEP 2115 states that Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 75 F.2d *>996<, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

The apparatus of Shishkin is capable of using a curable resin instead of the cement-sand mortar taught within. Shishkin column 3 lines 63-64 teach that the hose can be made from any prior art material, including polyethylene.

Claim 8:

Shown in the Shishkin figure 1 is a chamber filled with mortar (2) opposing the face of the piston (3) taken to be the plate claimed by applicant. The piston may have a cavity (20) or ducts (22) where the agent may be introduced.

Claim 9:

Shown in figure 1 of the Shishkin document is the piston (3) creating a formed layer (4) as it presses mortar over the sides of the conduit.

Claim 10:

The piston wipes the mortar onto the sides of the conduit as it passes through. (col. 5 lines 65-68)

Claim 11:

Shown in figure 3 of the Shishkin document is an embodiment of the piston (3). This piston (3) has a front and rear face which are taken to be the two seals. The piston

cavity (20) is taken to be the chamber between them. The walls bounding the cavity (20) are taken to be the inner walls as claimed.

Claim 14:

Shown in figures 6-8 is the section ahead of the piston (3) where the agent is added in preparation of the lining process.

Claim 16:

The hose (5) shown in figure 1 is being unwound from the drum (14) before being everted into the pipeline.

Claim 18:

Inherent to a collapsed hose is a folding or pinching of the edges where the hose is collapsed.

Claim 20:

According to figure 1, an area is formed between the piston (3) and the everting hose (5) where the agent passing beyond the piston is allowed to contact the hose (4). This is taken to be the "wet-out" region claimed by applicant.

Claim 21:

A flexible tube (9) is seen in figure 5 that projects from the contact surface and is embraced by the hose (5). Shown here is that the tube is inserted into the hose as it approaches the piston (3) for eversion.

Claim 22:

According to figure 3, the tube (9) creates a cavity between the parts of the hose. The agent is pumped along the hose (col. 4 lines 27-29)

Claim 23:

The piston (3) moves along the pipeline by the pull of a rope or by compressed air (col 4 lines 56-58).

Claim 24:

Col. 4 lines 59-61 teach moving the piston (3) by air pressure supplied through the hose (5).

Claim 25:

The towing mechanism (19) and pull rope (18) are shown in figure 6.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 30, 31, 37, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin in view of US 4,602,974 (Wood).

Claim 30:

Figure 1 of the Shishkin patent discloses an apparatus for lining the inside surface of a pipe wherein a piston (3) is moved along the inside of a pipeline (1). The piston spreads a layer of mortar (2), forming it to the pipe surface (4). This enables a hose to be everted along the formed layer (4). Also shown in figure 1 of the Shishkin patent is the hose (5) in contact with the piston (3) during the eversion of the hose. This piston (3) is taken to be the body claimed by applicant. This hose (5) is taken to be the flexible tube structure claimed by applicant. The tube used as a liner is the hose (5, Shishkin). It is shown in figure 1 of the Shishkin patent being everted into the conduit thus creating inner, outer, and everting tube portions. The exposed face of the everting portion is shown in the figure to contact the pipeline (1) where the formed surface (4) of the curable resin (as taught by Wood) lies.

Shishkin does not teach the agent as comprising a resin but teaches that any prior art material is acceptable for use as the hose (5, Shishkin). Wood teaches the use of a curable resin (col. 1 lines 41-47). Wood also teaches using a resin absorbent material (col. 1 lines 49-66). The Wood and Shishkin patents are both drawn to the lining of conduits. It would have been obvious to one having ordinary skill in the art at the time of the invention to use a resin absorbent material as taught by Wood in the apparatus taught by Shishkin motivated by the Shishkin teaching [Shishkin column 3 lines 63-65]. It would have been further obvious to one having ordinary skill in the art at the time of the invention to use a resin as taught by Wood in place of the mortar taught by Shishkin as the two serve the same purpose of coating the inside of the conduit.

Shishkin teaches "The flowing medium feed system 15 (FIG. 1) communicates with the

chambers 13 and 29 by means of tubes 35 with solenoid valves 36 of any prior art design mounted therein. A limit switch 37 contacting with the hose 5 serves to control the valves. (column 5 lines 47-52)" Shiskin also teaches "Once the whole hose 5 (FIG. 1) has been reeled off the drum 14, the switch 37 switches the solenoid valves 36 and the air begins to enter the cavity of the pipeline 1 disposed behind the piston 31 and shifts the latter along the pipeline 1, the rollers 32 being press-fitted via the hose 5 in the layer 4 of the strip 8. (column 6 lines 17-20)" Therefore there are sensing means to sense a condition associated with the installation process. This condition is the presence of hose on the drum. A condition identified in the specification [0059] is the delivery rate. When the hose on the drum is exhausted, the delivery ceases and air is pumped into the conduit. The operation of the switch changes the delivery rate of the material by sensing the presence of hose on the drum. Shishkin teaches "In the event of a failure in feeding the cement-sand mortar 2 along the tube 9, or upon the completion of application of the protective coating, the pressure of the cement-sand mortar in the tube 9 is declined and owing to the pressure of compressed air in the chamber 39 the plug 10 (FIG. 4) begins to move along the tube 9 and remove the mortar therefrom, thereby preventing the possible solidification of the cement-sand mortar in the tube 9. (column 6 lines 33-40)" This also addresses claim 38. Removing the excess mortar is a process that regulates the delivery of the material (that the material is curable resin instead of mortar has already been declared to be obvious). This addresses claim 39. The event of failure in feeding the mixture in the tube is another condition. It is a condition according to the specification [0059] "surface

condition of the conduit" addressing also claim 37. Therefore provided 2 (a plurality) sensed or monitored conditions and a means for varying them in response to the conditions. Since the conditions are sensed or monitored, the sensor or monitor itself is inherent.

6. Claims 12, 13, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin in view of WO 01/88338 (Graham).

Shishkin does not demonstrate a flexible membrane between the walls of the chamber. The apparatus in the Graham document is directed toward the application of a flexible membrane inside of a conduit as in the Shishkin document. In figure 4 of the Graham document, a flexible bladder (70) is shown between two spreaders (55 and 57). Also seen in the figure is another adjacent chamber on the body. The chambers are seen between the spreaders (53, 55, and 57). It would have been obvious to one having ordinary skill in the art to use a multi-chambered design and try with it a flexible membrane motivated by the design of the Graham apparatus; simple substitution of one known, equivalent element for another to may be obtained by combining the known design of Graham with the apparatus of Shishkin and predictable results would be achieved.

Claim 15:

The Graham apparatus is fitted with a suction head (290) at the leading end of the body. The suction head (290) is provided for extracting debris in the pipeline 30 ahead of the pipelining operation (Graham pg. 29 lines8-11).

Claim 19:

Figure 13 of the Graham document shows a conduit (132) provided within the liner to carry objects such as fluid or service lines such as telecommunication cabling. It would have been obvious to one having ordinary skill in the art at the time of the invention to include a cable in such a conduit motivated by the teachings of Graham (Graham pg. 18 lines16-21).

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin in view of US 5,855,729 (Kiest, Jr.)

Shiskin fails to disclose a means for retarding the body during the process. Kiest teaches a stop member (76) affixed to the cable (46) for controlling the extent of the eversion of the inflation bladder. (col. 7 lines 26-33). Both the Kiest and Shishkin patents are drawn to the lining of conduits. It would have been obvious to one having ordinary skill in the art at the time of the invention to use a stop member such as that in Kiest in the apparatus of Shishkin motivated by a desire to retard the motion of the body during the operation process.

8. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin in view of US 4,685,983 (Long, Jr.)

Shiskin fails to disclose a means for retarding the body during the process. Long teaches "The inversion and movement of the liner (34) along the sewer pipe continues until the inversion end reaches and abuts against a stop means (not shown) which has been placed inside of the sewer pipe at the end of the section of pipe to be lined." (Long col. 18 line 66- col. 19 line 2). The stop means described by Long is in contact with the interior of the conduit and, during operation, also in contact with the body. It would have

been obvious to one having ordinary skill I the art at the time of the invention to use this stopping method in the invention of Shishkin motivated by the desire to end the eversion process.

1. Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin as applied to claim 4 above, and further in view of US 3,200,024 (Leibiger).

Claim 42:

Shishkin does not teach that the plate is elastically supported. Leibiger teaches "The present invention relates to an improvement on a method of manufacturing rolled annular bodies on an elastic mandrel... a device for producing rolled annular bodies of knitted or woven fabrics, preferably impregnated with rubber, synthetic resin or the like, sheets, plates, layers of rubber, paper or metal, which has a mandrel on which there is arranged a roll stocking adapted to be removed from the mandrel by turning it inside out after the application of the material to be rolled, for the rolling of said material, characterized by the fact that the mandrel is elastic. (column 1 lines 11-24)" Leiberger also teaches "In the production of such rolls, the cross-section of which is relatively large as compared with the diameter, difficulties can arise insofar as the elasticity of the mandrel and possibly of the hollow cylinder is not sufficient to yield sufficiently to the roll without its strength in the rolling direction being thereby reduced. (column 1 lines 66-71)" Thus Leiberger, in a like process, elastically supports the mandrel. This mandrel is equivalent to the plate used by Shishkin. It would have been obvious to one having ordinary skill in the art at the time of the invention to elastically support the plate

motivated by a desire to provide a cylinder with sufficient yield to the roll without its strength in the rolling direction being thereby reduced.

Claims 43 and 44:

Shishkin teaches "The flowing medium feed system 15 (FIG. 1) communicates with the chambers 13 and 29 by means of tubes 35 with solenoid valves 36 of any prior art design mounted therein. A limit switch 37 contacting with the hose 5 serves to control the valves. (column 5 lines 48- 52). This limit switch is taken to be the proximity switch which is responsive to the movement of the plate.

***Response to Arguments***

1. Applicant's arguments filed 06/16/2009 have been fully considered but they are not persuasive.

Applicant's argument that Shishkin fails to teach or suggest an apparatus which, during the lining process, includes a body located inside a conduit which incorporates means for monitoring the installation process, and means for varying conditions in the installation process in response to the sensing of the conditions has been considered but it is not persuasive. The examiner has stated "Also shown in figure 1 of the Shishkin patent is the hose (5) in contact with the piston (3) during the eversion of the hose. This piston (3) is taken to be the body claimed by applicant." The examiner has also stated "Shishkin teaches "The flowing medium feed system 15 (FIG. 1) communicates with the chambers 13 and 29 by means of tubes 35 with solenoid valves 36 of any prior art design mounted therein. A limit switch 37 contacting with the hose 5 serves to control the valves. (column 5 lines 47-52)" This provides for the means for varying the

conditions. Therefore, in the above rejections of claims 1 and 30, it is shown how Shishkin teaches these limitations.

2. Applicant's argument that the provision of Wood, Graham, Kiest, and Long; Jr does not supply the limitations missing from Shishkin (and therefore claims dependant on claims 1 and 30 are allowable) had been considered, but it is not persuasive. The examiner has shown how Shishkin provides for the limitations allegedly missing in the rejection. Since Shishkin teaches the limitations of claims 1 and 30, claims dependant on these claims 1 and 30 are not allowable even taken with respect to Wood, Graham, Kiest, and Long; Jr.. These dependant claims are therefore not allowable.

***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID N. BROWN II whose telephone number is

(571)270-5497. The examiner can normally be reached on Monday-Thursday 7:30a-5:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571)-272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DAVID N. BROWN II/
Examiner, Art Unit 1791